

1 WHAT IS CLAIMED IS:

2 1. An arrangement of a tool insertable into the mouth of a horse for the
3 care and maintenance of teeth while providing protection of soft tissue
4 within the mouth of the horse and comprising in combination:
5 an electric rotary motor having a means to hold said tool along the axis
6 of rotation of said motor, said tool having a tooth cutting surface of a
7 preselected size and shape;
8 a shaft having one end mounted to said cutting surface and the other
9 end attachable to said motor holding means thereby supplying
10 rotational motion to said tool;
11 a shaft support means through which said shaft may be removably
12 inserted;
13 a hand piece having a channel through which said shaft support means
14 is removably insertable; and,
15 a cutting surface guard fabricated as a portion of said hand piece and
16 shaped to be in encircling relation about a selected portion of said
17 cutting surface thereby exposing only a portion of said cutting
18 surface under the condition of said shaft support means, having said
19 shaft inserted therein, is mounted within said shaft support channel
20 of said hand piece and said shaft engaged within said holding means
21 thereby allowing a user of the arrangement to guide said hand piece
22 containing the partially guarded tool into the mouth of the horse to
23 separate said soft tissue from a preselected portion of a tooth with
24 said cutting surface guard and position the unguarded portion of
25 said cutting surface against a tooth to remove a selection portion of
26 said tooth by means of said tool in rotary motion.

27

28 2 (First Amended). An arrangement of a tool insertable into the mouth
29 of a horse for the care and maintenance of teeth while providing
30 protection of soft tissue within the mouth of the horse and comprising
31 in combination:

1 an electric rotary motor having a means to hold said tool along the axis
2 of rotation of said motor, said tool having a tooth cutting surface of a
3 preselected size and shape;

4 a shaft having one end mounted to said cutting surface and the other
5 end attachable to said motor holding means thereby supplying
6 rotational motion to said tool;

7 a shaft support means through which said shaft may be removably
8 inserted, said shaft support means further comprises a bearing
9 mounted at a preselected position within said shaft support means
10 and a bearing seal mounted at a position between said bearing and
11 said cutting surface through which said shaft may be inserted and
12 supported for rotary motion without binding;

13 a hand piece having a channel through which said shaft support means
14 is removably insertable; and,

15 a cutting surface guard fabricated as a portion of said hand piece and
16 shaped to be in encircling relation about a selected portion of said
17 cutting surface thereby exposing only a portion of said cutting
18 surface under the condition of said shaft support means, having said
19 shaft inserted therein, is mounted within said shaft support channel
20 of said hand piece and said shaft engaged within said holding means
21 thereby allowing a user of the arrangement to guide said hand piece
22 containing the partially guarded tool into the mouth of the horse to
23 separate said soft tissue from a preselected portion of a tooth with
24 said cutting surface guard and position the unguarded portion of
25 said cutting surface against a tooth to remove a selection portion of
26 said tooth by means of said tool in rotary motion.

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28 3. The arrangement defined in claim 2 (First amended) further
29 comprising a brass sleeve mountable around said shaft under the
30 condition of said shaft being inserted through said bearing and
31 bearing seal into said shaft support means, said brass sleeve

1 providing separation between said shaft and said shaft support
2 means.

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4 4. The arrangement defined in claim 1 further comprising a flexible
5 shaft having one end adaptively mountable to said motor thereby
6 supplying rotational motion to said flexible shaft and the other end
7 having a means to hold said tool along the axis of rotation of the
8 flexible shaft thereby separating said motor from said tool so that
9 said motor may be supported at a position remote from said tool.

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11 5. The arrangement defined in claim 1 further comprising
12 preselected sized and shaped extended guards mountable to said
13 cutting surface guard to provide additional separation between
14 said cutting surface and said soft tissue within the mouth of the
15 horse.

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17 6. The arrangement defined in claim 1 wherein said hand piece
18 further comprises an orifice formed near said cutting surface and a
19 second channel one end in communication with said orifice, the
20 other end adapted to be removably attachable to a vacuum source
21 whereby the dust and debris created by the removal of a selected
22 portion of a tooth may first enter said orifice and then said second
23 channel to be sucked out of the mouth of the horse and deposited
24 into said vacuum source.

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26 7. (First amended) The arrangement in claim 2 (First Amended)
27 wherein said shaft support means further comprises gearing
28 means mounted within said shaft support means and in
29 communication with said shaft to change the rotational motion of
30 said shaft attached to said motor holding means into reciprocating

1 motion which may be applied to said cutting surface mounted on
2 said shaft remote from said gearing means.

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4 *CON*
5 8. (First amended) The arrangement in claim 2 (First amended)
6 wherein said shaft support means further comprises gearing
7 means mounted within said shaft support means and in
8 communication with said shaft to change the profile of the shaft by
9 a preselected angle thereby increasing the range of placement of
said cutting surface of said tool.

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11 9. The arrangement in claim 4 wherein said adaptive mounting of
12 said flexible shaft is to a motor owned by the user.

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14 10. The arrangement in claim 4 wherein said means to hold said tool
15 is a handle owned by the user, said flexible shaft having means to
16 adaptively mount said handle on the end of said flexible shaft
17 under the condition of said shaft mounted within said handle.

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19 11. The arrangement in claim 4 further comprising a clutch mounted
20 with one end in communication with said motor and another end
21 remote from said motor in communicated with said flexible shaft
22 thereby providing interruptible transmission of motion from said
23 motor to said cutting surface in communication with said flexible
24 shaft.

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26 12. (First Amended) An arrangement of a tool insertable into the
27 mouth of a horse for the care and maintenance of teeth while
28 providing protection of soft tissue within the mouth of the horse
29 and comprising in combination:

- 1 an electric rotary motor having a means to hold said tool along the axis
2 of rotation of said motor, said tool having a tooth cutting surface of a
3 preselected size and shape;
- 4 a shaft having one end mounted to said cutting surface and the other
5 end attachable to said motor holding means thereby supplying
6 rotational motion to said tool;
- 7 a shaft support means through which said shaft may be removably
8 inserted;
- 9 a hand piece having a channel through which said shaft support means
10 is removably insertable; and,
- 11 a cutting surface guard fabricated as a portion of said hand piece and
12 shaped to be in encircling relation about a selected portion of said
13 cutting surface thereby exposing only a portion of said cutting
14 surface under the condition of said shaft support means, having said
15 shaft inserted therein, is mounted within said shaft support channel
16 of said hand piece and said shaft engaged within said holding means
17 thereby allowing a user of the arrangement to guide said hand piece
18 containing the partially guarded tool into the mouth of the horse to
19 separate said soft tissue from a preselected portion of a tooth with
20 said cutting surface guard and position the unguarded portion of
21 said cutting surface against a tooth to remove a selection portion of
22 said tooth by means of said tool in rotary motion;
- 23 a flexible shaft having one end adaptively mountable to said motor
24 thereby supplying rotational motion to said flexible shaft and the
25 other end having a means to hold said tool along the axis of rotation
26 of the flexible shaft thereby separating said motor from said tool so
27 that said motor may be supported at a position remote from said
28 tool; and,
- 29 a clutch mounted with one end in communication with said motor and
30 another end remote from said motor in communicated with said
31 flexible shaft thereby providing interruptible transmission of motion

1 from said motor to said cutting surface in communication with said
2 flexible shaft, wherein said clutch further comprises means to adjust
3 the threshold of torque at which said motion is interrupted.

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5 13 (First amended) The arrangement in claim 12 (First amended)
6 further comprising a clutch housing mountable to said motor
7 thereby enclosing said clutch and having a mounting to retain one
8 end of said flexible shaft in communication with said clutch, said
9 clutch housing having an means for access by the user to the
10 means to adjust the torque.

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12 14. The arrangement in claim 1 wherein said hand piece and guard
13 are fabricated from aluminum.

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15 15. The arrangement in claim 14 wherein the exposed surfaces of said
16 aluminum are anodized.

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18 16. An electric motor powered arrangement insertable into the mouth
19 of a horse for the care and maintenance of equine teeth while
20 providing protection of soft tissue within the mouth of the horse
21 and comprising in combination:

22 a tool having a tooth material removal surface;

23 a shaft having a first end mounted to said tool and a second end
24 attachable to said electric motor whereby said tooth material
25 removal surface has a powered motion;

26 a hand piece fabricated with an internal shaft channel;

27 a bearing support sleeve;

28 at least one bearing mounted within said support sleeve at a
29 preselected position whereby said bearing accepts the insertion of
30 said shaft through said bearing thereby exposing the end of said
31 shaft remote from said tooth removal surface, said bearing support

- 1 sleeve mounted with said internal shaft channel whereby said
2 exposed end of said shaft is attachable to said electric motor, said
3 bearing providing support for said shaft under the condition of said
4 tooth material removal surface tool being guided into contact with a
5 preselected tooth and pressed against the tooth until a preselected
6 portion of the tooth is removed while said tooth material removal
7 surface is under powered motion;
- 8 a protective shield fabricated as part of said hand piece at a preselected
9 position and shaped to expose a preselected portion of said tooth
10 material removal surface of said tool retained within said hand piece,
11 said exposed portion guided into contact with a preselected portion
12 of the tooth whereby the remaining non-exposed surface is separated
13 from other portions of the horses mouth including said soft tissue;
14 and,
- 15 a sleeve mountable over said shaft within said shaft hand piece
16 whereby said sleeve provides additional bearing means between said
17 shaft and said hand piece without binding.
- 18
- 19 17. The arrangement defined in claim 16 wherein said bearing support
20 sleeve means further comprises a bearing mounted at a
21 preselected position within said bearing support sleeve and a
22 bearing seal mounted at a position between said bearing and said
23 cutting surface through which said shaft may be inserted and
24 supported for rotary motion without binding.
- 25
- 26 18. The arrangement defined in claim 16 further comprising a flexible
27 shaft having one end adaptively mountable to said motor thereby
28 supplying rotational motion to said flexible shaft and the other end
29 having a means to hold said tool along the axis of rotation of the
30 flexible shaft thereby separating said motor from said tool so that
31 said motor may be supported at a position remote from said tool.

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2 19. The arrangement defined in claim 16 further comprising
3 preselected sized and shaped extended guards mountable to said
4 cutting surface guard to provide additional separation between
5 said cutting surface and said soft tissue within the mouth of the
6 horse.

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8 20. The arrangement defined in claim 19 wherein said extended guard
9 further comprises an orifice formed near said cutting surface and a
10 vacuum channel one end of which is in communication with said
11 orifice, the other end of said vacuum channel adapted to be
12 removably attachable to a vacuum source whereby the dust and
13 debris created by the removal of a selected portion of a tooth may
14 first enter said orifice and then said channel to be sucked out of
15 the mouth of the horse and deposited into said vacuum source.

16
17 21. The arrangement in claim 16 wherein said bearing support sleeve
18 further comprises gearing means mounted within said bearing
19 support sleeve and in communication with said shaft to change the
20 rotational motion of said shaft attached to said motor holding
21 means into reciprocating motion which may be applied to said
22 cutting surface mounted on said shaft remote from said gearing
23 means.

24
25 22. The arrangement in claim 16 wherein said bearing support sleeve
26 further comprises gearing means mounted within said bearing
27 support sleeve and in communication with said shaft to change the
28 profile of the shaft by a preselected angle thereby increasing the
29 range of placement of said cutting surface of said tool.

- 1 23. The arrangement in claim 18 wherein said adaptive mounting of
2 said flexible shaft is to a motor owned by the user.
- 3
- 4 24. The arrangement in claim 18 wherein said means to hold said tool
5 is a handle owned by the user, said flexible shaft having means to
6 adaptively mount said handle on the end of said flexible shaft
7 under the condition of said shaft mounted within said handle.
- 8
- 9 25. The arrangement in claim 18 further comprising a clutch mounted
10 with one end in communication with said motor and another end
11 remote from said motor in communicated with said flexible shaft
12 thereby providing interruptible transmission of motion from said
13 motor to said cutting surface in communication with said flexible
14 shaft.
- 15
- 16 26. The arrangement in claim 25 wherein said clutch further
17 comprises means to adjust the threshold of torque at which said
18 motion is interrupted.
- 19
- 20 27. The arrangement in claim 26 further comprising a clutch housing
21 mountable to said motor thereby enclosing said clutch and having
22 a mounting to retain one end of said flexible shaft in
23 communication with said clutch, said clutch housing having an
24 means for access by the user to the means to adjust the torque.
- 25
- 26 28. The arrangement in claim 16 wherein said hand piece and guard
27 are fabricated from aluminum.
- 28
- 29 29. The arrangement in claim 28 wherein the exposed surfaces of said
30 aluminum are anodized.